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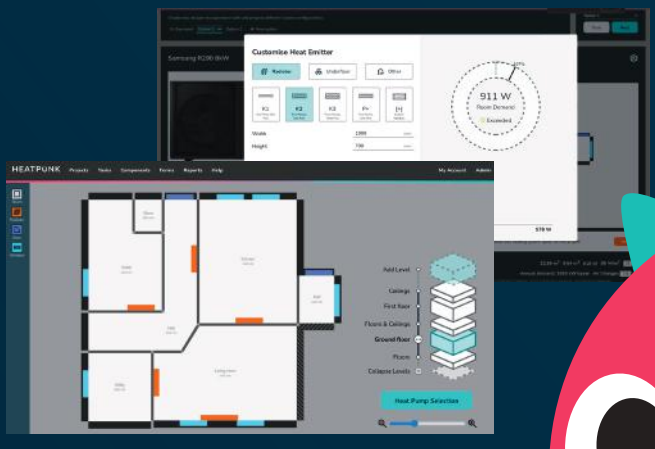

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Welcome to the October/November issue of Heat Pumps Today

After much conversation with many of our readers and contributors, it's clear the renewables sector is experiencing another positive trajectory. Installs are on the increase, upgrades, plus brand-new and innovative technology is being introduced. Heat Pumps are becoming more commonplace within conversations by the homeowners. Curiosity is rising, understanding the benefits is paramount and which installers/engineers (with the correct knowledge), do they approach is still a hurdle for them.

With this in mind, the Heat Pumps Today team have now launched a brand new information zone. **Heat Pump Your Home** is a new platform designed to inform, educate, and support the homeowner. An informative website/e-newsletter/social platform(s) where homeowners can go to get advice, contact details of their locally skilled engineers, grant updates, and of course the benefits of heat pumps within their homes.

If you would like to find out more or contribute, please get in touch.

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Report highlights the need to solve UK's electricity and gas price disparity

The European Heat Pump Association's (EHPA) 2024 market report has been released and highlights[1] the crucial impact of a low electricity and gas price ratio in accelerated heat pump deployment.

As of August, the electricity and gas price ratio in the UK is 3.97, the highest in Europe and nearly double EHPA's recommendation of 2.

The report illustrates that those European countries with a high 'spark gap' (the ratio between household electricity and gas prices) also have a lower annual total of sales of heat pumps per household.

A significant contributor to high electricity prices in the UK is the disproportionate application of Environmental and Social Obligations – often referred to by the Government as "policy costs" and known commonly as "green levies". Domestic electricity consumers, bear around 85% of these levies, which means a typical heat pump consumer pays £170 more than an equivalent gas boiler consumer in levy costs per annum.

In November 2023, the HPA proposed the introduction of an Interim Domestic Heat Pump Tariff Discount to provide a short-term solution to reducing the price of electricity relative to gas, whilst fundamental reforms to the electricity market were considered and implemented. This report and extensive background analysis sets out the implications of a range of options to tackle one of the key challenges in accelerating heat pump deployment, running costs.

Commenting on the recently published report, Charlotte Lee, HPA Chief Executive said: "This latest data release yet again highlights the crucial need for the UK Government to act quickly to tackle the disparity between electricity and gas prices to accelerate heat pump deployment. The Labour Government have been clear they are the party of delivery, and it is imperative that the new Government now prioritise the publication of a consultation on this issue."

UK heat pump sales per household remain the lowest across Europe with only 2.08 heat pumps per 1000 households sold. This highlights the scale of the opportunity that remains in the UK, which will only be realised if swift, decisive action is taken to reduce the price of electricity relative to gas.

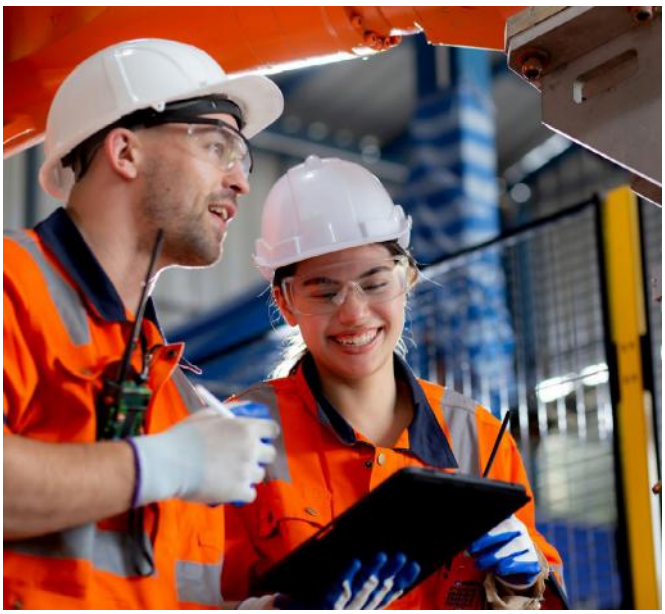
ehpa european heat pump association

www.ehpa.org

Source

1. **www.ehpa.org/product/2024-market-report**

The future of vocational training: Comparing attitudes towards traditional and renewable energy trades



The job market is evolving, and so are young people's choices in vocational training. Renewable energy jobs are becoming popular due to increasing environmental concerns. This shift reflects changing values and career interests. Confused.com's energy experts surveyed UK 16-24-year-olds. They wanted to know their views on renewable energy trades vs. traditional vocational subjects.

Young people generally perceive electricians as offering the highest salaries. Following closely are renewable energy roles, including Heat Pump Engineer, which ranks among the top 10 trades believed to offer the highest salaries upon completing the relevant qualifications.

Traditional trades, like mechanics and plumbers, also have significant earning potential.

Barriers to pursuing renewable energy trades

It was identified that the biggest hurdle to pursuing renewable energy courses is a lack of information in schools. Over 43% of young people stated that they'd want information about available training programs during school years, along with work placement opportunities during education.

Young people also believe there are few local jobs (25%), high training costs (24%), limited training locations (23%), and unclear job prospects (22.5%). They want higher apprenticeship salaries (41%) and more help finding apprenticeships (39%).

While traditional trades maintain a strong appeal, renewable energy vocational courses are increasingly seen as viable and attractive career paths. To encourage this transition, discussions in schools about renewable energy options, along with access to training facilities while being financially supported will see more enter the renewable energy workforce.

www.confused.com/gas-electricity

Heat pump training qualification numbers show sustained growth

The Heat Pump Association's (HPA) newly published Q2 2024 heat pump qualification data demonstrates increasing levels of interest in heat pump training in the UK, with just over 2,400 individuals completing a heat pump training qualification in Q2 2024, pushing the total to 4,875 for the year so far.

This marks a 14% increase in the number of individuals trained when comparing the first half of 2024 to the same period in 2023. Even more striking is the 37% rise in qualifications from Q2 2023 to Q2 2024.

Laura Thomas, Chair of the HPA Training Working Group, expressed her enthusiasm for this positive trend: "The steady growth in people successfully completing heat pump training courses reflects the increasing recognition and value given to heat pumps as a key technology in the UK's transition to net zero. The rise in qualified individuals year on year solidifies the efforts of training providers to meet the demand of upskilling the workforce to support the growing market."

The HPA and its members remain dedicated to supporting the development of a skilled workforce capable of accelerating the installation of heat pumps in the UK. With the demand for training continuing to rise, the HPA will continue to collaborate closely with training providers, stakeholders, and policymakers to ensure policy, support, and training standards remain up-to-date and effective.

For a comprehensive view of the HPA's Training Statistics visit the HPA website:
www.heatpumps.org.uk/resources/statistics

Number of Individuals trained to install Heat Pumps in the UK

UK reaches 250,000 certified heat pump installations

According to the latest data from MCS (Microgeneration Certification Scheme), the UK's quality mark for small-scale renewable energy installations, the UK has now reached 250,000 all-time certified heat pump installations.

It is a major milestone in the UK's adoption of small-scale renewables and the latest data highlights that uptake is gathering pace. From January to July 2024, more than 30,000 certified heat pumps were installed in homes and small businesses across the UK, which is a 45% increase compared to the same period in 2023 and puts 2024 on track to be a record-breaking year for the technology as more people transition to cleaner, greener heating solutions.

The Boiler Upgrade Scheme (BUS) remains a vital part of making heat pumps more affordable and accessible. Recent Government figures show that BUS applications are up 73% from January – June 2024 compared to the same period in 2023, with a total of 14,554 BUS applications submitted in the first six months of 2024. This reflects the growing number of consumers across England and Wales who are taking advantage of the incentive, which provides £7,500 towards the installation of a heat pump and requires it to be MCS certified.

For those in Scotland, the Home Energy Scotland (HES) Grant and Loan offers a similar incentive, with grants up to £7,500 for heat pump installations, and up to £9,000 for households that qualify for a rural uplift.

For near-real-time updates on renewable installations, you can sign up for free to The MCS Data Dashboard by visiting:
www.mcscertified.com/about-the-mcs-data-dashboard

To find a BUS registered MCS certified contractor near you visit: **www.mcscertified.com/find-an-installer**

BREng rolls out apprenticeship program as demand for low carbon cooling and heating soars

BREng, is expanding its workforce in response to growing demand for its services nationally. The first apprentice to be appointed in the recruitment drive is Adam Sykes, a 17-year-old trainee, based at the company's headquarters in Hull.

Adam will follow a three-year Level 3 course funded by a government training grant, with specialist modules in HVAC and electrical theory and the option to progress to Level 4/5/6 degree-level equivalent qualification.

Rob Smelt, managing director of BREng, said: "The goal is to develop Adam into a fully qualified Building Services Project Engineer, ensuring a 360-degree understanding but with a bias towards the electrical side of HVAC systems, to complement BREng's existing capabilities."

Adam's initial focus will be on training in HVAC design calculations and a solid grounding in CAD, before moving on to specialise in the electrical side of HVAC projects.

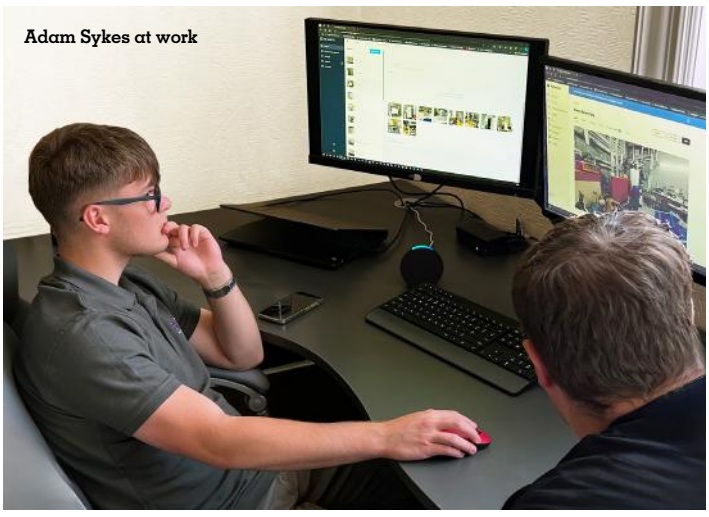
The BREng training program includes CIBSE courses and in-work support from specialists co-opted from local contractors embedded within BREng to expand its skills base, with reciprocal arrangements for BREng specialists to support collaborating companies.

Adam is already working on active commercial projects for BREng, supporting lead HVAC designer Tom Smelt on a major project at a world-renowned automotive manufacturer in Crewe, and carrying out site decarbonisation audits/surveys of schools with Jack Marvin-Smelt, BREng Hull's digital surveyor, in preparation for installation of heat pumps and upgraded heat emitters.

Rob said: "Demand for low carbon cooling and heating is expanding at a tremendous rate. The need to decarbonise the national building estate will require a huge increase in manpower and skills to achieve the UK's net-zero targets, and we are only just in the foothills of this challenge.

"We aim to play our part by helping to recruit and train the new generation of engineers and designers needed, with further apprentices joining the program shortly to ensure we have a pipeline of talent with the right skills for the future."

www.brenghull.co.uk



Adam Sykes at work

UKRadiators.com appoints Mark Webber as New Operations Director

Mark Webber, Operations Director at UKRadiators.com

UKRadiators.com has appointed Mark Webber, as the new Operations Director. Mr Webber brings over 11 years of experience from Tiffany & Co., where he was instrumental in building their e-commerce operations.

This strategic hire is part of UKRadiators.com's growth plan. By improving supply chain efficiency, the company aims to scale its business more rapidly and profitably. New systems, such as the Slim4 intelligent forecasting engine and an upcoming CMS for enhanced delivery choices at the point of sale, are set to be implemented under Webber's leadership.

UKRadiators.com Managing Director, Rob Nezard, said: "Mark's leadership style and deep understanding of e-commerce operations stood out to us.

"Mark's approach to retaining and developing key team members was a significant factor in his selection, aligning with our commitment to nurturing talent and fostering a collaborative work environment, he is a great fit in terms of skills and culture."

Mr Webber's responsibilities will include overseeing supply chain management, enhancing business operations, and improving overall efficiency within the company.

Mark said: "I am particularly drawn to the company's dedication to efficiency, excellence, and continuous improvement in delivering top-notch radiators to customers across the UK.

"There reputation for staying ahead of industry trends and leveraging technology to enhance the customer experience is impressive. I am excited about the opportunity to contribute to and further develop these initiatives.

"Moreover, the company's focus on sustainability and energy efficiency in its products aligns perfectly with my values and professional goals. I am eager to work with a team that prioritises innovation and customer satisfaction, and I believe my experience and expertise in operations management will contribute significantly to the company's continued success and growth in the online market."

www.ukradiators.com

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The route to a heat pump-fuelled future for commercial buildings

Pete Mills, Commercial Technical Operations Manager at Bosch Commercial & Industrial gives his take on heat pumps and how taking a hybrid approach can support their continued pick-up in UK non-domestic buildings.

Retrofitting non-domestic buildings with heat pumps presents both challenges and opportunities for contractors aiming to support their clients' ambitions to decarbonise heat demand. Given the vast array of building types and heat demand profiles in this sector, there is no one-size-fits-all solution.

Many non-domestic clients are keen to proactively phase out fossil fuels, recognising that the commercial private sector is often targeted when regulatory pressures intensify, usually with limited government support. These clients frequently turn to their trusted heating contractors for advice on cost-effective, reliable solutions that pave the way forward.

While transitioning fully to heat pumps is the ideal route to achieving Net Zero targets, the diverse applications, building types, and locations can quickly temper initial enthusiasm. Costs can escalate rapidly, leading clients to retreat from heat pump solutions, often opting instead for another gas boiler replacement due to the high barriers associated with a full transition.

Pete Mills, Commercial Technical Operations Manager at Bosch Commercial & Industrial

Hello to hybrid

There is, therefore, a strong case for offering solutions that guide clients toward heat pumps while managing current barriers and costs. Hybrid systems provide a flexible option, allowing clients to take their first steps toward decarbonisation without overwhelming financial or operational risks. Similar to how hybrid vehicles introduced the public to electrification in the transport sector, hybrid heating systems could be the catalyst for a broader shift towards heat pumps in non-domestic settings. Moreover, these systems can also help contractors who are less familiar with full heat pump solutions feel more confident in the range of options they can provide.

Hybrid systems, where gas boilers are retained for domestic hot water (DHW) production, can be particularly

advantageous in situations with high hot water demand. By dedicating gas boilers to DHW, the need for high-temperature generation from heat pumps is eliminated, allowing them to operate at stable, low temperatures for extended periods. This can improve the seasonal coefficient of performance (SCOP) and reduce wear and tear on the heat pumps.

This approach also allows for smaller heat pump sizing, along with reduced pipework and thermal storage requirements. Dividing the system into high-temperature and low-temperature zones is generally straightforward in non-domestic systems, as most work will be confined to existing boiler rooms. The simplest configuration assigns heating loads to the heat pumps and DHW loads to existing boilers, although there are many other options to explore. These configurations can allow the heat pumps to pre-heat water and provide a gas boiler backup for high heating demands, offering flexibility while simplifying the design process.

Keeping the spark alive

One of the most common barriers in the non-domestic sector is the availability of sufficient electricity supply capacity, affecting both urban and rural buildings. In urban areas, local supply networks may already be at capacity due to the installation of multiple EV charge points and heat pumps, leaving the next customer-facing costly reinforcement works from the local distribution network operator (DNO). In rural areas, the supply may simply be undersized, or the availability of three-phase supplies may be limited without extensive work.

Hybrid systems that use gas boilers to reduce peak electrical loads can combat this supply challenge to help facilitate the introduction of heat pumps This is because they enable them to cover 70%-80% of annual kWh demand, with gas boilers handling peak loads. This is particularly useful on the coldest days when demand is highest and air source heat pumps operate at their lowest coefficient of performance (COP).

Bringing the old into the new

Hybrid systems can also serve as a practical steppingstone for older heating systems designed for 82°C/71°C flow and return temperatures, where the cost of a major renovation to accommodate low-temperature operations is prohibitive. With some basic rebalancing of radiators and the introduction of weather-compensated heating circuits to replace outdated on/off controllers, significant performance improvements can be achieved. Weather-compensated heating circuits maintain consistent low flow temperatures throughout the year, enhancing heat pump COP and reducing energy consumption. These systems are particularly beneficial in non-domestic settings with constant heat demands, such as care homes and healthcare facilities, and should be considered essential.

Components and controls

As with any heating system, good design and the selection of efficient components, such as replacement pumps, are crucial for reducing energy consumption. The commissioning process is particularly important to ensure seamless operation as weather conditions change, so adequate time for commissioning should be factored into project estimates, with consideration given to seasonal commissioning visits.

Experience has shown that involving controls specialists early in the project is vital. Delayed engagement of the controls specialist can lead to unnecessary project extensions and callbacks to make adjustments. All parties must understand the system's operation to ensure reliable performance and low energy use.

To summarise, in order to increase the adoption of heat pumps in non-domestic buildings, we must adopt pragmatic approaches to overcoming the barriers preventing some systems from transitioning to electrification. Hybrid systems can help build client confidence in replacing gas boilers with heat pumps, which is especially important for critical heat requirements, such as in care homes. Although hybrid systems may seem more complex to contractors, with the right approach and manufacturer support, they can quickly become a familiar and effective solution.

www.bosch-industrial.com/gb/en

Developing more accurate models of heat pump running costs

Andy Rankin, Founder and Managing Director at Midsummer, explores ways to accurately model and innovatively reduce the running costs of heat pumps.

There is a problem in the UK: the relative price of gas and electricity often means that the typical running costs of a heat pump match or even exceed those of the gas-fired boilers we're aiming to replace. Even if a grant scheme helps cover the up-front installation costs, why would a householder sign up for higher bills? It's perhaps no surprise that heat pump uptake remains rather lacklustre!

One answer is to change the relative costs of gas and electricity, perhaps by moving environmental charges from electricity bills onto gas bills. That's one for the politicians - and perhaps the new Government will take action on this. But in the meantime, there are several ways that the running costs of a heat pump can be significantly reduced.

Reducing the running costs of a heat pump

Firstly, if installed in a property with a solar array, some of the electricity needed for the heat pump will come from the solar array. That isn't 'free' energy of course - quite apart from the cost of installation of the solar array there is lost income from exported electricity if it is diverted to a heat pump instead. But it is very likely to be significantly cheaper than energy bought from an electricity company.

Secondly, if a property can take advantage of time-of-use tariffs to move some of the heat pump demand into periods when electricity is cheaper, that again has the potential to significantly reduce costs.

But by how much?

You don't want to be vague or generalise when presenting a heat pump installation proposal to customers. You want to confidently say, "We have modelled your property, and we expect your running costs to be:

Andy Rankin, Founder and Managing Director at Midsummer

- A if you continue to run on gas;
- B with a heat pump and your current electricity tariff;
- C if you also install a 5kW solar array and an 8kWh battery;
- D if you switch to this time-of-use tariff;
- E if you do all of the above and use a smart controller as well."

Unfortunately, these calculations are quite complex. However, models are being developed to simplify the process, including ones by Easy PV and Heat Punk.

The main problem is that this:

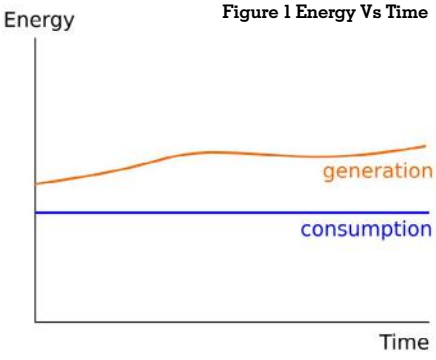

Figure 1 Energy Vs Time

Figure 1: Energy Vs Time
A household has a constant load of 1kW for three hours one morning. The sun is out and gradually climbing higher in the sky, and the solar generation always exceeds the demand in the house. Overall, 3kWh of electricity is used during this period, and 4kWh of electricity is generated. 1kWh of electricity is exported to the grid at, let's say, 7p/kWh. So, the property has a net income of 7p.

Is not the same as this:

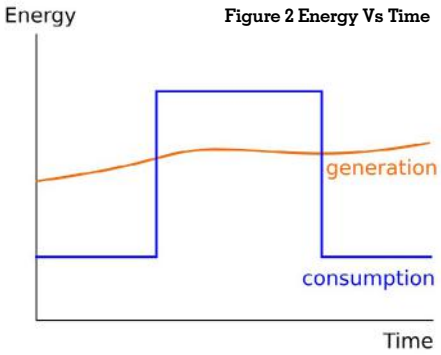

Figure 2 Energy Vs Time

Figure 2: Energy Vs Time
Exactly the same amount of electricity (3kWh) is used as shown in Figure 1, but this time the demand is not constant. There is instead a large peak for an hour - it might be perhaps from a heat pump switching on to run the water heating cycle. In this scenario, more electricity (2.5kWh) is exported, so the property receives an income of 17.5p for exported electricity. But over the same period, they need to import 1.5kWh of electricity at, say, 28p/kWh, costing them 42p. This time there is a net cost to the property over the period of 24.5p. That's a big difference!

The upshot of this is that you can't use averages or rules of thumb to calculate

the running costs of a heat pump when solar or smart tariffs are involved. Fundamentally you need to run a model of solar generation, household electricity consumption, and additional consumption from a heat pump at high resolution - minute by minute - over a full year in order to work out (and price), the flows of electricity into and out of a property. Only by running a detailed, complex model at high resolution will you have reasonable confidence that the predictions will be fairly close to reality.

This problem doesn't just arise for heat pumps. It applies to any electrical loads in a property. The detailed models of solar generation and household consumption we have built into Easy PV allow users to give a good idea of the likely financial benefits of a solar array to their customers.

Within Easy PV, we have recently expanded this functionality in order to allow half-hourly consumption data to be uploaded where available (with the caveat that half-hourly data is already more smoothed than we would like and doesn't capture short spikes like boiling a kettle: we add a little bit of noise back in to make it more realistic). And we've added the ability to add time-of-use tariffs which can take account of price differences for imported and exported electricity at different times of day. We are now working on extending our model further and sharing it with our heat pump design tool (Heat Punk) so that we can accurately predict the running cost of a heat pump with different solar and battery systems. By adding in heat pump space heating and domestic hot water profiles appropriate to the heat pump being specified and the expected heating demand of the property we can start to generate predictions for the anticipated running costs of a system.

The final step will be to model the impact of smart controllers. A lot of heat pump demand can be 'moved around' to make use of the cheapest energy available. This is particularly true of the hot water cycle, as the cylinder acts as a form of energy storage. With a smart controller, you can choose to run the Domestic Hot Water (DHW) heating cycle in the middle of a sunny day, when there is spare solar to soak up - or it can be run in the middle of the night when electricity prices are lower. The expensive day rates can almost entirely be avoided.

Demand for space heating is harder to move around, but a smart controller can take advantage of the thermal mass of a property to bring the temperature of the property up a little during cheap overnight periods or when there is excess solar power available (we have started working on modelling this too).

In Conclusion

The upshot is that soon you should be able to use tools to give customers a much more accurate indication of the cost of running a heat pump - and show them just how big the savings they can expect are when they use solar, heat pumps, batteries, and smart tariffs together. If you can demonstrate to your customers that they can actually save money by switching to a heat pump - something that is very hard to do with any kind of confidence at the moment - we believe that take up of heat pump installations will increase significantly.

Easy PV is a suite of easy-to-use tools for designing solar arrays and Heat Punk helps installers calculate heat loss and specify the most appropriate heat pump. Both tools are free to use.

To find out more visit:
easy-pv.co.uk and
heatpunk.co.uk
www.midsummerwholesale.co.uk

One in 10 households need to switch to heat pumps in the next five years: How can copper piping spearhead a sustainable change?

A look at the benefits of copper pipping and why this must be at the heart of the UK reaching its climate goals.

The popularity of heat pumps in the UK is increasing, with more people becoming aware of their environmental benefits. At the end of 2023, applications had increased by 49% year on year[1], with many taking advantage of the Boiler Upgrade Scheme. However, to reach the UK's climate obligations, there is still a long way to go – new analysis from innovation charity Nesta[2] has found that there must be a 12-fold increase in installations over the next five years compared with the last five years; resulting in the installation of 3 million more heat pumps and other low-carbon heating systems by 2030.

With one in 10 households needing to switch to heat pumps in the next five years to help the UK hit targets, what exactly does this mean for residents? Why should they make the change?

Heat pumps are extremely efficient due to the energy output they can produce. Reaching efficiency levels of 300%, there is significant transformation in the amount of energy that your home uses compared to the 85% level a regular boiler operates at.

Possessing a longer lifespan, heat pumps require a reduced need for maintenance, allowing households save money over time and reduce their carbon footprint, given they don't consume fossil fuels.

'Visit a Heat Pump' scheme's contribution

One initiative key to the uptake of heat pumps usage is the 'Visit a Heat Pump' scheme, backed by Nesta[3] at the beginning of April 2024.

www.visitaheatpump.com helps homeowners to learn more about heat pumps in a real-world setting, allowing them to book visits in their local areas where heat pumps are already in use to see how they work and inspire confidence about adopting low-carbon heating systems.

From the scheme, 150 heat pump owners have already signed up, with London leading the way with the most heat pump hosts, while East Anglia is growing with 11 hosts advertising visits.

Why should heat pumps be made with copper piping?

Heat pump installations are the next big step towards the UK reaching its climate goal, and copper must be at the heart of this change over damaging materials like plastic.

Copper is suitable for supplying heating, water and gas into homes. As an excellent conductor of heat, it allows for rapid and efficient heat transfer, making it the standout choice for supplying the heat generated by low-carbon heating systems.

The material also possesses a host of environmental benefits over plastic piping for heat pumps. Not only is it an infinitely recyclable material but is favourable because of its thermal resilience and ability to withstand fluctuating temperatures; an area where plastics can crack very quickly.

Copper pipes can be integrated with air-source heat pumps, transporting the heat extracted from outside air to radiators, electric heaters and other outlets. As well as improving efficiency, copper pipes are also infinitely recyclable, helping to reduce carbon emissions associated with the design of air-source heat pumps.

With the construction industry desperately needing to improve its sustainability, single-use plastics must be eliminated and replaced with an infinitely recyclable alternative like copper to make homes fit for the future.

To find out more about the recyclability of copper and its importance in heat pumps, visit: **www.cuspuk.com**

Source

1. https://tinyurl.com/damzrtd5
2. https://www.phamnews.co.uk/report-calls-on-parliament-to-focus-on-decarbonising-home-heating
3. https://tinyurl.com/e9mppruk

COOLING | HEATING | VENTILATION | CONTROLS

Ask ME*
about decarbonising heating

*Beth Roberts, Account Manager London North

Ecodan CAHV-R

As we near the end of gas, contractors are already installing renewable heating in buildings across the UK. With the heat pump market doubling year on year, more and more installers are helping make the switch from traditional gas boilers.

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MITSUBISHI ELECTRIC

Looking to our neighbours for heat pump inspiration

Paul Smith, MD at NIBE, discusses how we must look to our European neighbours to gain the confidence needed to realise the potential of the heat pump market.

At NIBE, we have a unique position on heat pumps; firstly, our core market is heat pumps, and it has always been. We have undeniably invented some of the technology widely used today. In Sweden, where NIBE is based, heat pumps are well-established and commonplace. Across Europe, the same is becoming true in many countries - all with different climates and needs - showing that heat pumps are suitable for a wide variety of buildings, end-users, and environments, delivering effective and efficient heating (and cooling). The UK is lucky in some respects, we can look to these more mature markets to tailor our own.

Last year, France topped the heat pump installation leaderboard with 500,000 installs – we sat around 60,000. Things are improving here, but the pace is still much slower than the majority of our European neighbours. The good news is that this means there are a lot more heat pumps to install, and endless opportunities for suitably trained installers. So, what inspiration can we take from more across the pond?

Mind the gap

At the time of writing, the UK's spark gap has been hitting the headlines, following a report from the European Heat Pump Association (EHPA) that shows it is the highest in Europe; i.e. we pay much more for electricity than we do gas. Unsurprisingly, the countries with the smallest spark gap have the greatest heat pump sales.

Where electricity is more than 3 times the price of gas the cost of running a heat pump vs a boiler is almost equal. Historically, we've tried to promote renewables in terms of a 'return on investment', but the disparity between electricity and gas is a barrier to accelerating take-up. It's important to note that well-installed, high-efficiency heat pumps in energy-efficient homes, will still save money, even with the current cost of electricity.

Paul Smith, Managing Director at NIBE

Closing the spark gap would make a huge difference and is something that the Government is currently looking into as part of its Review of Electricity Market Arrangements (REMA). The Heat Pump Association (HPA) would like an interim Domestic Heat Pump Tariff Discount to provide a short-term solution.

While most likely the primary reason why heat pump take-up has been slower in the UK, closing the spark gap must not come at the cost of gas customers – simply raising the price of gas will penalise some of the poorest in society.

Embrace exhaust air

Exhaust Air Heat Pumps (EAHPs) are very popular in Sweden (an NIBE invention). They deliver energy-efficient, renewable heating by extracting heat from inside a building and providing ventilation, making them ideal for flats, apartments, and small new builds. With no need for an outdoor unit, EAHPs are perfect for densely packed urban locations.

At the moment, EAHPs are not covered by the Boiler Upgrade Scheme (BUS). I would like this technology to be added, not least because it has the potential to provide fossil-fuel-free, energy-efficient heating to the largest number of people. To meet the UK's decarbonisation targets, we must embrace all types of heat pumps, at the moment there is an unbalanced focus on Air Source Heat Pumps (ASHPs).

Fact over fiction

It's been great to see the many reputable reports that counter much of the negativity and fearmongering that surrounds heat pump rhetoric in the UK.

Nesta has been doing an excellent job in this area, and their most recent report about heat pump noise - an issue which is almost exclusively a British problem (we've done our research which shows Google searches around 'are heat pumps noisy?' really only come from the UK) – demonstrates clearly that 'noise concerns' are a non-issue.

The report concludes that multiple air source heat pumps running in the same street would not noticeably increase background noise. The average heat pump is about as loud as a refrigerator and comparable to a gas boiler, yet objections have been raised in planning applications involving multiple heat pumps, stalling progress. MCS sets the permissible noise level of a single heat pump at 42 decibels (dB), not much louder than a quiet library.

Stick to policy

With a new Government in power, it's crucial they stick to any policy they bring in relation to renewables and our path to net zero. Across Europe, there are some countries where heat pump sales are slowing, and according to an EHPA report issued last year, the heating contribution to the EU's 2030 decarbonisation targets will be missed if current trends continue.

Growth is still happening in Germany, Belgium, and the Netherlands, with a decline in Italy, Finland, and Poland. One of the key reasons for the slowdown according to the EHPA is changing policies and schemes. Italy experienced a major change in its heat pump support funding which destabilised consumer confidence. By contrast, the Netherlands has stable policies that have boosted growth.

We have seen firsthand the market stimulation created by the BUS. I hope that this is continued and expanded. Labour's plans to introduce low-cost loans for renewable and energy efficiency measures also look promising.

Protect consumers

Many consumers feel trepidation when switching to a heat pump, worried that their bills will be high and they won't be kept warm. Horror stories make the headlines and confidence in sole traders and small businesses is dented where end users feel they have no security if things go wrong.

Installers can improve this situation by partnering with a manufacturer who will provide product training (usually free) and technical back-up. NIBE Pros, for example, can offer their customers long warranties, and if things do go wrong and the installer needs help, our dedicated team of experts are at the end of a phone/will visit a site if needs be. We want happy NIBE heat pump owners, so it's in our interest to ensure satisfaction.

Learn and improve

The UK heat pump market is immature but growing rapidly. We have the benefit of hindsight from more mature markets, we can pick and choose the bits that have worked and learn from mistakes. Installers have a real opportunity to capitalise on this situation, and manufacturers and other industry experts must take the baton of guidance and support. A transition to net zero is a collective task, that has huge economic and environmental benefits.

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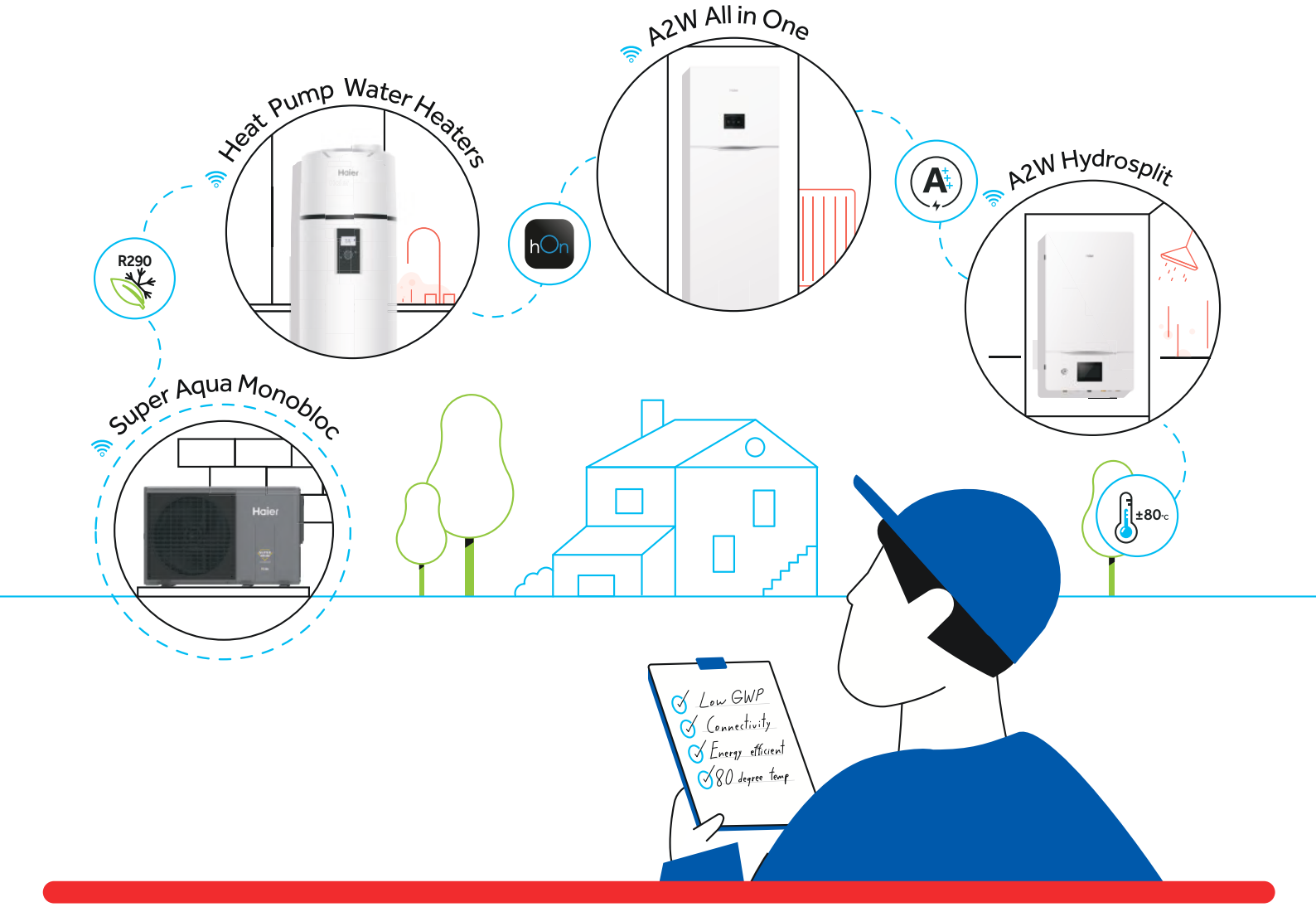

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Greenpeace – it's not just about ticking boxes

Editor, **Juliet Loiselle**, and Sales Manager, **Victoria Brown** were invited to view the installation of the Palladium Hydrocarbon Heat Pump at Greenpeace HQ in London.

The Palladium 120.4 Air Source Heat Pump

Greenpeace, has made a real statement of its commitment to sustainability by installing this Propane (R290) Heat Pump at its 1920s office building in Islington North London. The new Palladium 85kW Palladium 120.4 unit, manufactured by the Italian company Enerblue, provides both space heating and hot water to the main office building replacing its old gas boiler. This installation marks the UK launch of the Ultra Low Noise Palladium range of R290-based heat pumps, designed for commercial and industrial applications.

Why was this installation important to Greenpeace?

Greenpeace want to continue to be ahead of the curve when it comes to clean energy. So much so, that they even invited 12 Labour members of parliament as dinner guests the week before our visit. The Greenpeace team were very proud to show off their new Heat Pump and explain how the Government needs to invest around 2.5 billion, to help consumers afford and make the best decisions with renewables – this is paramount to achieve 2025 Net Zero targets.

The 1920s building was previously used as an industrial site. In fact; it housed animal testing laboratories, something which is not lost on Greenpeace. This enormous retrofit project was part of a long-term plan for Greenpeace. Starting in 2010 they started to reduce building related CO_2, adapting the building fabric helped, as did the migration of their servers across to the cloud. High-efficiency lighting was installed and even EV charging is now a fleet requirement. The final piece for this particular plan was sourcing the best way to create cleaner and greener energy.

After much monitoring of their current usage, and many investigations into their existing heating and hot water systems they agreed with Pure Thermal that the Palladium Hydrocarbon Heat Pump was their best option.

Tick boxes for their air source heat pump requirements;

✓ **Ultralow noise** - Due to being set within a highly residential area in the middle of London

✓ **Retrofit suitable** – Meaning sensitivity to the fabric and existing systems of such an old building

✓ **High temperature output** – With a highly populated office hot water was paramount

✓ **Natural non F-Gas considerations** – Hydrocarbon Refrigerant was the best option

"This project is a great example of a hydrocarbon heat pump providing high performance and resilience in a commercial application located within a residential area in central London," said **Garry Broadbent** of Pure Thermal."

The defrost strategy is one which will not allow any degradation of output temperature whilst the heat pump is in defrost mode. Even with providing irrigation for the garden post the defrost cycles – very clever!

www.greenpeace.org.uk
www.purethermal.co.uk
www.enerblue.it

WOMEN IN THE HEAT PUMP INDUSTRY

Megan Gotobed shares her journey from humble beginnings to becoming Head of Operations for the Residential Product Group at Mitsubishi Electric, discusses the challenges facing the industry, and asks: "Why wouldn't women consider joining the heat pump industry?! It's an incredibly exciting time as we stand on the cusp of tremendous growth, bringing with it lots of opportunities."

What was your first job?

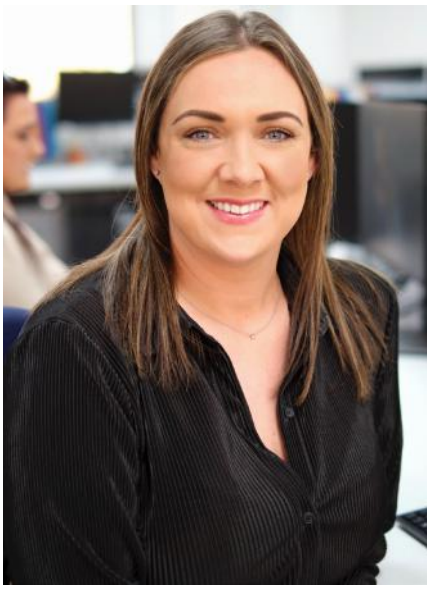
My first job was as a Silver Service waitress at a hotel when I was very young, and I loved it! Every weekend, I was immersed in the lively atmosphere of weddings, functions, and the hotel restaurant. The fast-paced environment kept me busy and energised, and I enjoyed the variety of working with different people every day.

I've always been highly motivated to work and earn money, so I took on as many shifts as possible, balancing them around my education. This job gave me a fantastic foundation for building my customer service, communication, and people skills which have been invaluable throughout my career.

How did you get into the heat pump industry?

I stumbled into the heat pump industry quite by accident! My journey began in 2007 when I joined Mitsubishi Electric on a 12-month maternity leave contract in an administrative role. At just 19, I was the youngest member of Mitsubishi Electric's Living Environmental Systems division, which was solely an air conditioning department at that time. The Ecodan heat pumps had not yet been introduced.

Shortly after I joined, Ecodan heat pumps were launched, and the Heating department began to take shape. The company was looking to recruit its first one-to-one (121) Heating Account Manager, a position in internal sales. Initially, I wasn't keen on applying because I had a misconception about what a career in



Megan Gotobed, Head of Operations for the Residential Product Group at Mitsubishi Electric

'Sales' entailed and I didn't think it would be for me. However, I decided to take the plunge and was successful in becoming the first 121 Heating Account Manager.

Initially, I had no existing customers, so my job was to cold call Plumbing and Heating companies across the UK, introducing them to our new 'Air Source Heat Pumps'—a concept unfamiliar to many. This role required me to educate potential clients about this upcoming technology.

Over the next few years, my role evolved, and I advanced to the position of National 121 Manager, where I grew the team of 121 Account Managers. After maternity leave, I transitioned into the role of Heating Operations Manager, focusing on establishing and centralising a dedicated Heating Operations team to better support our heating partners.

Following my second maternity leave, I continued to enhance the Operations team and eventually progressed to Senior Operations Manager. In April 2024, I took on my current role as Head of Operations for the Residential Product Group. Throughout my tenure at Mitsubishi Electric, I have been instrumental in setting up and growing two key teams within the Residential Heating Product Group.

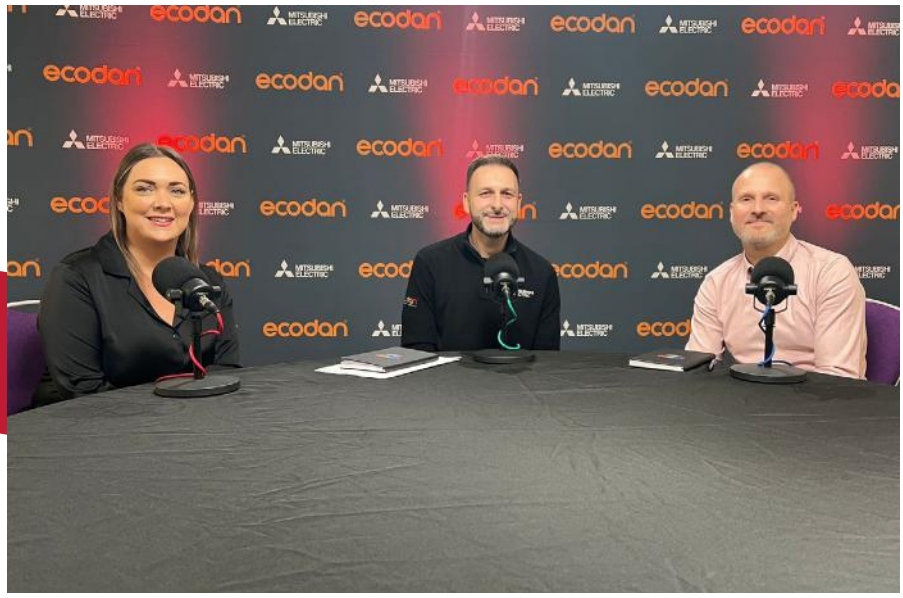
What does your current role involve?

As Head of Operations, I oversee the operational activities within the Residential Product Group at Mitsubishi Electric. My primary responsibility is to ensure that we provide the best customer service and operational support in the HVAC industry.

Leading the Operations teams, my focus is on elevating customer service and centricity. I constantly review our existing services and processes, looking for ways to strengthen these to support the company's strategy and growth plans.

The Operations team is a customer-focused, central hub within the residential heating group. We manage orders, deliveries, and stock, and provide vital support to the Sales team.

It's a varied and fast-paced role — which I love. I enjoy being busy, having a wide range of tasks, and interacting with different people and teams every day.



Megan participating in a podcast panel discussion

Do you have any mentors or anyone who inspires you?

Throughout my career at Mitsubishi Electric, I've been lucky enough to work with some fantastic people. In my early years as the 121 National Sales Manager, I had the privilege of being mentored by Michelle Coombe. She has been an inspiration to me since I joined the company. Michelle started her career in a very similar entry-level role to mine and progressed through various management positions, eventually becoming the joint LES Divisional Manager.

What truly inspired me was watching her continuously advance her career while starting a family. She showed me that a career doesn't have to stop after having children. As a young and inexperienced manager in a predominantly male industry, Michelle was instrumental in building my confidence and helping me navigate challenges, shaping me into the leader I am today.

One piece of advice from her that has always stuck with me is, "Be curious." It's a simple yet powerful reminder to ask questions and seek knowledge.

I'm inspired by people who start from the very bottom and work their way up. I hope to inspire others as well, showing that it doesn't matter where you start, you can always progress and further yourself.

What do you see as the challenges facing the industry?

The rollout of heat pumps and the decarbonisation of home heating are critical if we are to achieve net zero. This means the retrofit of existing homes and ensuring new homes are built with heat pumps.

At Mitsubishi Electric, we are committed to manufacturing Ecodan heat pumps. However, a significant challenge is the need for more trained heat pump installers. If the Government's target of installing 600,000 heat pumps per year is to be met, this gap must be addressed.

Increasing homeowner uptake is another challenge. Consumers need greater awareness of heat pumps and their advantages over fossil fuel boilers, such as efficiency, lower running costs, and sustainability. Many people are still unaware of what a heat pump is, how it works, and why it's a better option for home heating than gas or oil.

Additionally, reducing electricity costs to make heat pumps more attractive and affordable for households is essential. This is especially important in the current cost-of-living crisis, where volatile gas prices are impacting household utility bills.

What would you say to other women who are considering coming into the heat pump industry?

Why wouldn't anyone consider joining the heat pump industry?! It's an incredibly exciting time as we stand on the cusp of tremendous growth, bringing with it lots of opportunities.

There's a common misconception that you need a technical qualification or a technically minded to succeed in this field, but that's absolutely not the case. If you have adaptable skills, are motivated by continuous development, and are driven to make a positive impact, then I would recommend joining our industry.

It's extremely rewarding to know that what we do today is helping future generations and shaping how our world will look in years to come.

What do you like to do outside of work?

With two young children, much of my time outside of work is spent entertaining them and enjoying family activities. However, when I do get some time for myself, I have a few passions that I love to indulge in.

I'm a big fan of the theatre, and so far, Moulin Rouge has been my favourite show. I also enjoy diving into suspense and thriller novels—Verity and The Housemaid series are among my top picks.

Recently, I've been keen on improving my cooking skills, with my air fryer getting plenty of use. I have recently taken some cooking classes to learn new recipes and techniques, which I'm excited to continue exploring!

One in five building service engineers unfamiliar with overheating regulations

Jason Bennett, indoor air quality expert at Zehnder Group UK discusses some concerning results of a study regarding UK Building Regulations' Approved Document O.

Jason, explained that the research study, commissioned by Zehnder Group UK in collaboration with CIBSE Journal reveals that a staggering 20% of building service engineers are unfamiliar with the UK Building Regulations' Approved Document O, which addresses overheating in buildings - and almost half (46%) claim to understand the theory behind it but are unsure how to put it into practice.

It found that while a third (34%) of respondents claimed to know Part O 'inside out', the majority had a limited understanding – with 19% admitting they simply don't understand it at all.

The report surveyed architects, consultants, developers, and contractors, to get a better view of the understanding across the building industry when it comes to overheating.

Jason Bennett, indoor air quality expert at Zehnder Group UK

Overheating is a real problem in residential buildings. When properties exceed a temperature threshold of 26°C for extended periods it can seriously affect occupant thermal comfort, health, and wellbeing as well as productivity.

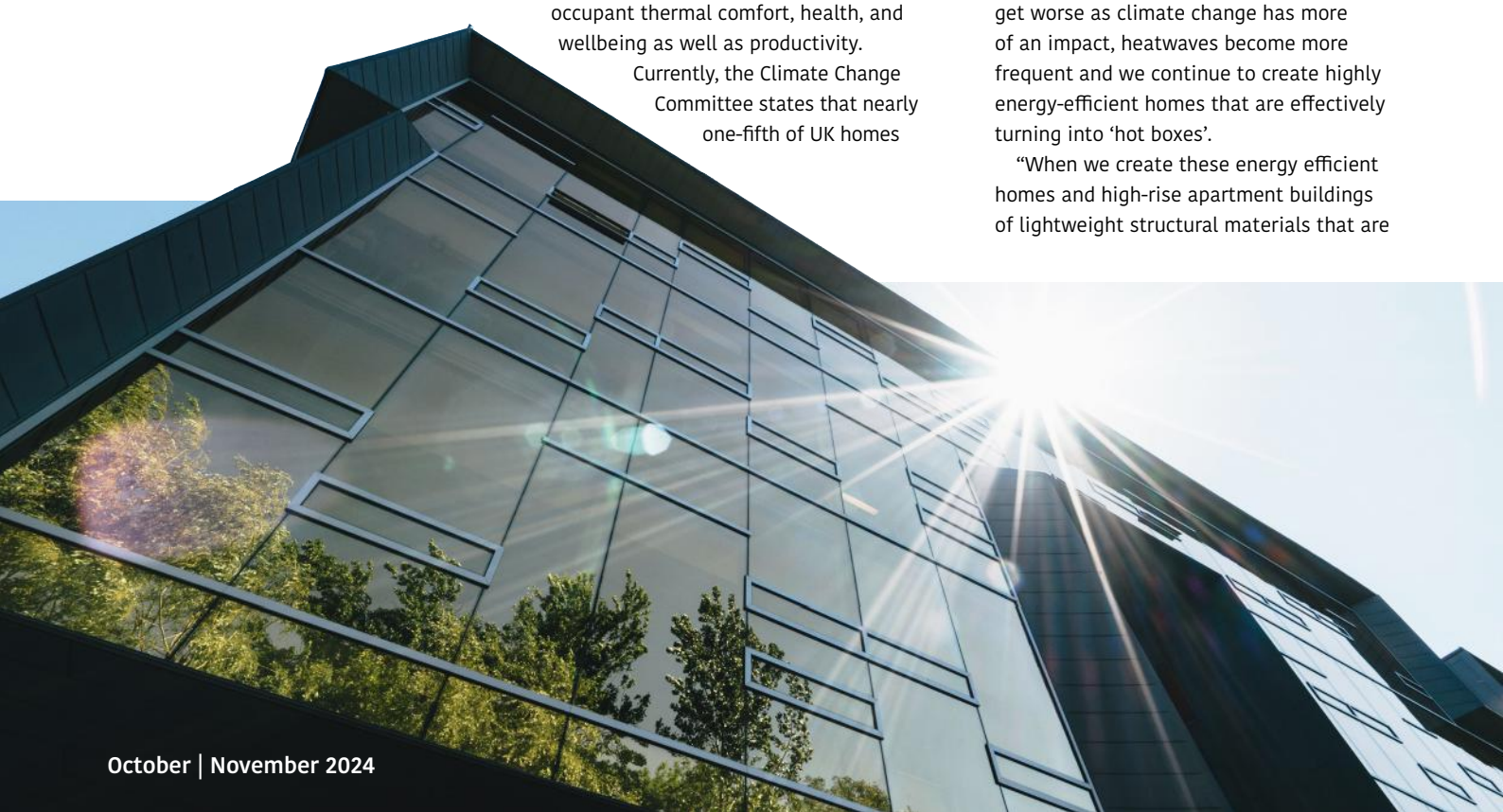
Currently, the Climate Change Committee states that nearly one-fifth of UK homes already overheat, even during cool summers and it is reported that nine in 10 existing UK homes will be at risk of overheating if worldwide temperatures rise to 2°C above pre-industrial levels by 2050, if global warming continues on its current trajectory[1].

The research found that despite this evidence of overheating risks, the topic ranked relatively low among the respondents' list of priorities, with design, quality, building regulations, and energy efficiency coming out on top in new building projects – whereas modelling against the risk of overheating ranked eighth.

When asked what kept them up at night when planning a new building project, the top three concerns were design, cost and quality, with overheating being cited as sixth.

Jason said: "The issue of overheating isn't going to go away; it's only going to get worse as climate change has more of an impact, heatwaves become more frequent and we continue to create highly energy-efficient homes that are effectively turning into 'hot boxes'.

"When we create these energy efficient homes and high-rise apartment buildings of lightweight structural materials that are



notorious for solar gains and lack thermal mass as well as greenhouse levels of glass, we end up spending a lot of money trying to reduce the temperature within those properties," Bennett continued. "Whilst improved energy efficiency must continue to be a priority, the future has to be about cooling solutions to ensure comfort and improved health for building occupants."

High-rise apartments were identified by 65% of respondents as the most at-risk buildings for overheating. However, a significant proportion raised concerns about schools (40%), care homes (39%), and hospitals (30%). All these building types cater to children and the elderly, who are among the most vulnerable in society.

Dr Anastasia Mylona, Technical Director of CIBSE commented: "It's not surprising that one-fifth of the survey respondents lack awareness of Approved Document O. Many building service consultants and engineers do not encounter overheating due to the specialised nature of their roles. If you're not doing overheating assessments, then you will not know a lot about Part O and how to comply with it.

"Engineers and consultants working in smaller teams are more likely to carry out Part O compliance calculations. It must be looked at in the context of the much lower level of awareness about overheating just a few years ago. Five or 10 years ago, nobody thought about it. That is a massive improvement that Part O has brought."

Yet Zehnder believes this lack of understanding is 'a worry'. Bennett counters that the 19% may include contractors who tend not to get involved with specifying overheating measures, but will include others that do. He says: "I would expect all the consultants, developers, specifiers and architects to know about Part O. These groups of professionals should be very familiar with Part O, which suggests that overheating should be more firmly embedded within the sector's education curriculum. It's all about education, education, education."

While the level of understanding about Part O is concerning, knowledge of the causes of overheating in buildings was higher. The majority of respondents (78%) pointed to solar gain through increasing glazing as a primary cause, followed by unsuitable ventilation (45%), global warming (40%), inability to open windows (40%), and excessive insulation (39%).

When it comes to tackling overheating in buildings almost 8 in 10 (78%) actively prioritised passive cooling options, such as solar shading, optimised glazing and openable windows, over mechanical ones, with just 14% opting for the latter, reflecting the approach laid out in Part O.

Yet one respondent noted that mechanical cooling is 'more predictable and dependable', and another said, it is not always possible to rely on passive measures due to boundary constraints. For example, in highly urbanised areas such as central London, where noise and air pollution prevent window opening, recourse to mechanical ventilation and cooling is nearly inevitable.'

The survey findings underscore the need for a holistic and joined-up approach to buildings that incorporate robust strategies to mitigate overheating risks. This includes promoting better indoor air quality alongside cooling.

Bennett says: "Overheating needs to be designed out and thought about almost at the pre-planning stages. We have to look at the dynamics of the building and we need to be coordinating our efforts along the way - and not just us, as an indoor climate solutions manufacturer – we should be networking and coordinating with the others responsible for mitigating overheating risks.

"Mechanical cooling can be achieved with Air Conditioning, but this method is costly to run and recirculates air rather than replaces it with filtered air - and you would still need to ventilate the property. A better solution is to incorporate air temperature into an effective ventilation strategy, which is also required in line with Part F. The difference is fresh, clean air supply all year round with heat recovery in the winter and cooling in the hotter months – promoting better, healthy indoor air quality (IAQ).

"Evolving systems within the home can now include ventilation and heat pump integration to limit the risk of overheating, ensuring compliance with Part O. Using a reversible heat pump to trigger and supply an output of 7 to 45 degrees can be utilised with a water coil, like the Zehnder ComfoPost. This is combined into the existing air distribution network using pre-insulated ducting and an MVHR, such as Zehnder's ComfoAir Q range, to provide up to 5.64kw of cooling and 6.51kw of heating."

"These systems are all cogs in the much larger machine of a home," Bennett concludes. "I'd much rather have a ventilation system that was filtering particles rather than capturing them in my lungs. I can change the filters - I can't change my lungs. If it can also keep my property cool, it's a win-win."

To read the full report visit:
www.cibsejournal.com/uncategorized/hot-and-bothered-zehnder-overheating-survey

For more information on how to mitigate overheating in buildings visit:
www.zehnder.co.uk/en/sectors-knowledge/topics/overheating

Source

1. Report published by Arup, 2022

www.cibse.org
www.zehnder.co.uk/en

Five ways we consider temperature in our heat transfer fluids

When it comes to developing heat transfer fluids, temperature is fundamental. At Blended Products, we understand that keeping systems running efficiently, safely, and sustainably depends on how well fluids perform across a range of temperatures.

This is why our Blended Fluids range of heat transfer and maintenance fluids are tailored to meet the specific needs of HVAC, refrigeration, and other temperature-sensitive industries.

We're covering the five ways we prioritise temperature when developing our range of heat transfer fluids to help harness the full potential of renewable heating and cooling systems.

1. Freeze protection

Ensuring heat pump and chiller systems can safely operate at temperatures below 0°C is essential for protecting these systems. However, with their high viscosity, most antifreeze mixtures add extra parasitic pumping loads. With this in mind, we developed our bespoke glycol blends to protect heat pump systems at low ambient temperatures while maintaining their high performance and market-leading low viscosity.

2. Thermal conductivity

The most important characteristic of a heat transfer fluid is its thermal conductivity and its ability to transfer heat. We engineered our range of fluids to achieve market-leading thermal conductivity. Whether you need to reach specified temperatures for optimal cold storage or require efficient and effective heating, our range of Coolblend and Thermablend fluids has been formulated to transfer heat energy efficiently.

3. Highly stable biocide

Our Coolblend and Thermablend ranges can be offered with pre-mixed biocide designed to eliminate and prevent bacterial growth. This will help maintain system efficiency and prolong the life of the heating system. We've ensured our specially selected biocide remains highly stable across a broad temperature range for ongoing heat pump performance and heat transfer efficiency.

4. Effective multi-metal inhibitor

Our Thermablend and Coolblend fluids contain multi-metal corrosion and scale inhibitors that remain effective throughout the idle and operational temperatures of closed-loop heating and cooling systems. These NSF-approved inhibitors continue to provide protection over a wide range of temperatures, from heating to process cooling, ensuring system longevity and reduced maintenance, whatever the application.

5. Energy saving

We're not only conscious of how effectively our fluids reach the desired temperature but also about the impact our fluids have on the temperature of our climate. In the pursuit of a sustainable future, we developed our heat transfer fluids with efficiency at their core, so you can get the most out of your closed-loop heat distribution systems. With their low parasitic pumping loads and relatively high thermal conductivity, we formulate our Thermablend and Coolblend fluids to perform their purpose using the minimum amount of energy. This all helps in the battle against carbon emissions.

Save up to 27% on your energy bills

Understanding the critical role temperature plays in system performance, we have partnered with SafeSol to distribute Delta-T, an advanced surfactant designed to significantly improve the thermal transfer efficiency of water-based cooling and heating systems.

Delta-T uses a patented surfactant formula that reduces water's surface tension, allowing it to penetrate surface cavities more effectively. This increases surface contact, enhancing thermal transfer for both cooling and heating. The result is faster temperature regulation with up to 27% lower running costs. Designed to boost efficiency and sustainability, the additive is fully compatible with all system metals, construction materials, and chemical products, ensuring seamless integration without compromising existing protective functions.

A solution to mitigate UK energy demands

Given that cooling and heating water consumes a significant portion of the UK's energy, even modest improvements in efficiency can lead to substantial reductions. If applied across the UK's commercial and industrial sectors, Delta-T could offer a quick return on investment and play a significant role in advancing sustainability efforts.

Your partner for heat transfer innovation

We pride ourselves on providing innovative solutions for your heating and cooling needs. We offer Delta-T both as a standalone product and pre-mixed with our glycol-based heat transfer fluids, combining our glycol blends and protective additives with even greater efficiency. With Delta-T, you're not just choosing an additive, you're selecting a powerful tool that can redefine energy efficiency in your operations.

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Revolutionary new product to reduce heating and cooling associated energy demands by up to 27% launched to market

Blended Products, experts in specialty chemicals and gases, has become a distributor of Delta-T, an advanced surfactant that significantly enhances the efficiency of water-based heating and cooling systems.

Delta-T is a liquid additive, utilising a patented formula developed by chemicals firm SafeSol following 15 years of research.

It works by reducing the surface tension of water, which allows water within a heating or cooling system to reach a much greater surface area of heat exchangers, leading to a dramatic increase in heat transfer efficiency. In university tests, a space heated by a copper coil got to 24°C 3.2 times faster with Delta-T.

Alex Robinson, MD of Blended Products ltd, said: "Delta-T is a revolutionary product that substantially reduces energy consumption, heating and cooling costs, and CO_2 emissions. Not only does it offer customers a quick return on their investment, but its mass adoption can significantly mitigate UK energy demands."

A three-month trial by Bradford Council found that using Delta-T would reduce the annual energy costs of its main office, a Victorian building with a 20,000 litre heating system, by 27%.

This reduction in energy usage represented an annual cost saving to the council of £33,600 as well as a 31-tonne reduction in CO_2output.

Vicki Morrison, MD of SafeSol Ltd, said "We are excited to be working with Blended to get Delta-T to a wider audience including domestic and commercial heating and cooling system users. We feel that Blended, with its experience in the specialty chemical industry, is an ideal partner to help take Delta-T to next level."

www.BlendedProducts.com/DeltaT

Sustainable garden centre combines heat pumps with passive heat recovery and solar PV

BREng, has completed a high-efficiency HVAC system based on heat pumps, natural ventilation and solar PV for a new state-of-the-art sustainable garden centre in Tingley, near Leeds.

Heat recovery ventilation ductwork spans the indoor retail area

Plant room with hot water systems and associated pipework

Daikin heat pump-based VRF outdoor units alongside the centre

With passive heat recovery, rainwater harvesting and LED lighting, the garden centre in Tingley, is designed to be as self-sufficient as possible in power and water.

The original plan for the centre was to install a full natural ventilation solution augmented with heat pumps. However, calculations showed this would be unable to cope with high summer loads and present problems in winter, when significant additional heating would be needed to warm incoming cold air.

The final design, produced by BREng for installer EBA Climate Limited, is a fresh air ventilation solution with incoming/outgoing air passed through a high-efficiency Daikin passive heat recovery system, supported by Daikin VRV heat pumps. This provides a high quality environment for customers and staff, supported by efficient heating and cooling when required.

The centre's rainwater harvesting system provides grey water for watering plants, flushing toilets, and hosing down paved areas.

BREng's **Rob Smelt** says: "The only power input required for the ventilation system is the fans, and these are fed by electricity from the roof-mounted PV system, which produces most power when the sun shines when ventilation requirements are highest."

The site is served by two heat pump systems, one heating the retail area and providing heating and cooling to the cafe, restaurant and children's play area, and the other providing hot water for washrooms and kitchens via connected VRV hot water modules.

A Daikin heat pump-based VRV and heat recovery system was chosen due to the manufacturer's iNTELLIGENT Touch Manager control system, which enables multi-zone control and operates like a mini Building Management System, allowing integration of third-party equipment, such as over-door heaters. The 442kW system comprises 15 four-way cassettes and eight large-capacity ducted units, served by 10 heat recovery modules.

A key challenge was ensuring the ventilation system dovetailed with the heat pump and electrical system, with ducted arrays supplying the sales area and suspended cassettes in the cafe and restaurant.

Tom Smelt, BREng's lead designer, said: “All overhead building services in the centre are exposed and visible, therefore it was important to ensure the design of the HVAC system was coordinated with electrical services and lighting, to ensure the overall look of the final installation was neat and unobtrusive.”

The design maximises the solar energy-capturing potential of the roof, with ventilation intake and exhaust vents installed on the north-facing roof sections, leaving the south-facing slopes for PV panels, with capacity to produce up to 350kW.

Electricity from the PV panels is used to augment the centre's mains supply, powering HVAC systems, lighting and on-site EV chargers when required, and fed into the grid when power is in surplus.

Dale Allsopp, who headed the installation for EBA Climate Limited, said: "The installation went without a hitch, helped by the spacious retail area and generous plant room. The system has performed consistently, delivering an even, stable temperature in all areas."

Mark Farnsworth, YGC group managing director of Yorkshire Garden Centres, said: "Since being commissioned, the system has performed as hoped-for, providing a comfortable and relaxing environment for customers without noticeable hot spots. As a business we are continually striving to do the best we can to reduce our carbon footprint, and this project has helped us reduce every aspect of our consumption.”

He added: "The focus on use of renewables is part of our strategic goal of becoming carbon neutral by 2026. We are rolling out similar projects at our existing and proposed new garden centres across Yorkshire to achieve this."

The company currently operates four sites, with garden centres also at Tong, Otley and Bingley.

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Kensa's Stuart Gadsden (L) and RCTBC's Jon Arroyo (R) at the spring

Innovative school heating system harnesses heat from thermal spring

A primary school and bowls pavilion in a South Wales village have switched to clean, renewable heating, but in an innovative way that cannot be replicated anywhere else in Wales.

Ffynnon Taf Primary School and the Pavilion at Taff's Well Bowling Club in Taff's Well, Wales, have had a bold new heating system installed by Kensa, the UK-based Ground Source Heat Pump specialists, that uses naturally occurring heat from the only thermal spring in Wales – the historic Taff's Well Spring.

This unique water source heat pump system harnesses natural heat from the warm spring water, which emerges from deep beneath the earth at around 21o C, to provide the two council-owned properties with low-carbon heating and hot water.

Using the innovative clean heating method instead of gas is expected to cut the school and pavilion's carbon emissions linked to heating by close to 80%. It also demonstrated a way of using Kensa's ground source heat pumps without drilling vertical boreholes to access heat energy stored in the ground.


Kensa System drawing water from the Taff's Well thermal spring

The idea of using the Taff's Well thermal spring to heat buildings was initially proposed by the Friends of Taff's Well community group, who were looking at other ways the historic spring could benefit the local community.

This project follows other retrofit renewable heating installations completed in non-domestic buildings by Kensa. Using ground source heat pump technology the UK's leading manufacturer and solutions provider has futureproofed heating and lowered carbon emissions caused by heat in multiple UK schools and council properties.

The unique installation also highlights the versatility of Kensa's ground source heat pump systems and forms part of Rhondda Cynon Taf Borough Council's ambitious plans to decarbonise by 2030.

How the system works:

- Kensa's ground source heat pumps, found in thousands of UK properties, are usually set up to source energy from the ground to provide heating and hot water.
- The one-of-a-kind installation at Taff's Well pumps warm water from the spring and passes it through a nearby heat exchanger, which is connected to Kensa's ground source heat pumps housed inside the school and pavilion.
- In this highly energy-efficient system, heat energy stored in the warm spring water is absorbed and converted by the heat pumps into usable energy for the school and pavilion's heating and hot water systems.
- While in the system, the water is confined to its own pipework, mostly hidden under the ground and out of sight, and doesn't encounter any other substances to ensure there's no issue of contamination or pollution.
- To keep the connecting pipework hidden and to avoid above-ground damage, Kensa horizontally drilled hundreds of meters between the Well, the school, and the pavilion.
- After passing through the system, the clean water is emptied back into the Well's overflow, feeding into the River Taff.
- This is the only system installed by Cornwall-based Kensa that uses a natural thermal spring as a heat source.

Kensa's **Dr Stuart Gadsden** visited the site, along with representatives from Rhondda Cynon Taf County Borough Council, to demonstrate to pupils from the Ffynon Taf Primary School's Eco Committee how their new low-carbon heating and hot water system works.

Dr Stuart Gadsden, Kensa Contracting Commercial Director, said: "This is an incredibly unique system and really demonstrates how versatile Kensa's ground source heat pumps are. It was great to show the pupils how their exciting new heating system works and how it will reduce their carbon footprint.

"Kensa has a proven track record of delivering the high efficiencies of ground source heat pump technology for numerous UK schools and local authorities, providing them with a futureproofed low-carbon heating system.

"Using the historic Taff's Well thermal spring as a renewable heat source is a brilliant example of how bold ideas can lead to something that benefits future generations. It's something the whole community can be proud of, and we were pleased to play our part in making it happen."

Ffynnon Taf Primary School Headteacher, **Kathryn Price**, said: "We are very excited about how Taff's Well Thermal Spring has been utilised for the whole school community. Our Eco Committee thoroughly enjoyed learning more about the heat pump system and how this helps to reduce the school's carbon footprint. We will continue to celebrate the success of the thermal spring installation in our community for many years to come."

Jon Arroyo, Energy and Carbon Reduction Manager at Rhondda Cynon Taf County Borough Council, said: "We have an ambition to decarbonise the Council by 2030 and we understand there is no one solution to decarbonise our heating systems, so it is important that we look at what heat resources are around or under us. As a Council we see our role in exploring alternative solutions to help steer our businesses and residents in their journey towards a net zero future."

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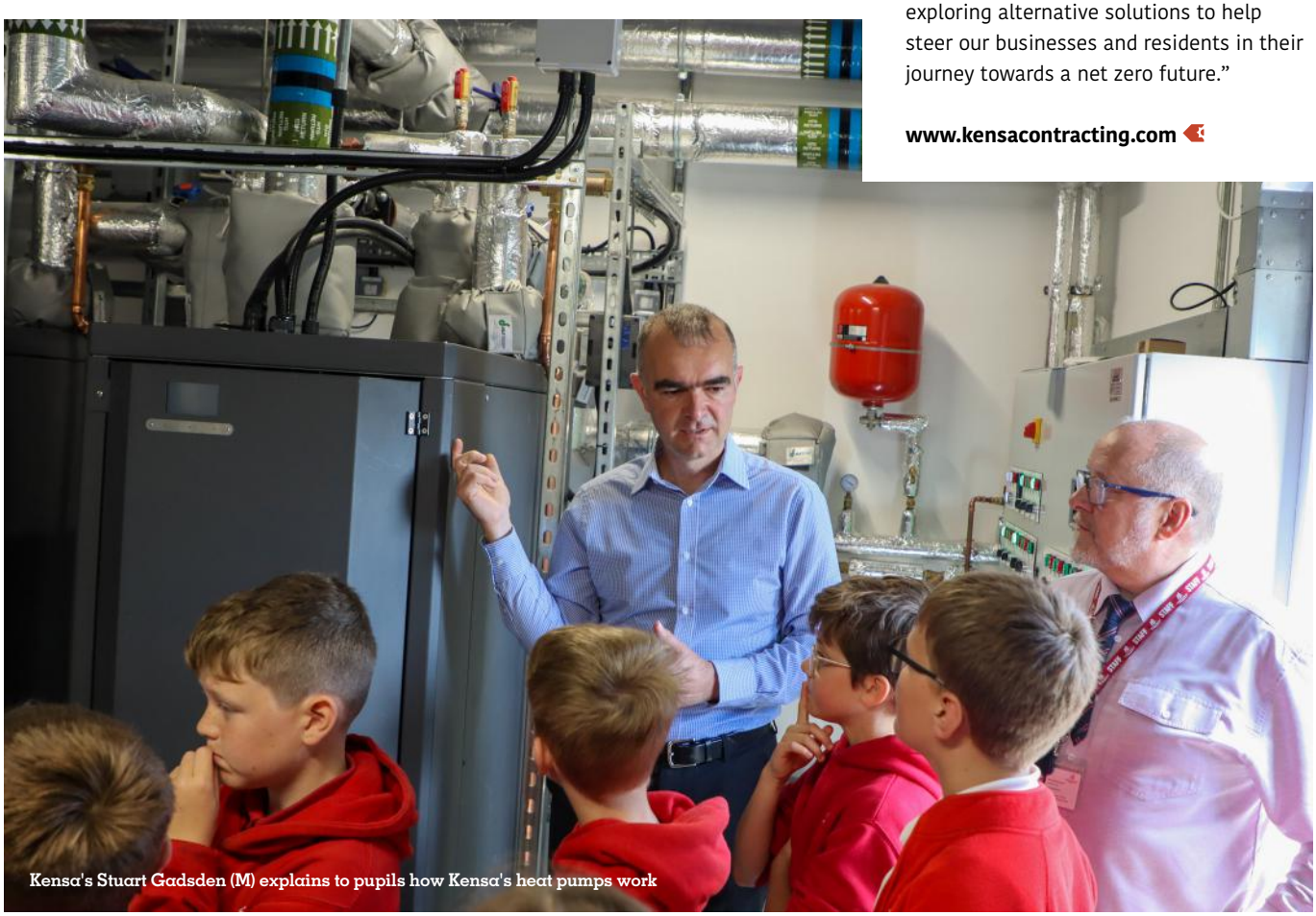

Kensa's Stuart Gadsden (M) explains to pupils how Kensa's heat pumps work

The Innovation Zone

The guide to what's new for Heat Pumps Today readers, offering vital industry news.
To advertise your product in 'The Innovation Zone' section please contact **victoria.brown@warnersgroup.co.uk**

Inta Hydra: Integrating ASHPs with Existing Boilers

Inta, a UK manufacturer of heating and plumbing products, revealed its first hybrid heat pump system, Inta Hydra, last autumn. This hybrid solution offers homeowners an affordable and straightforward transition to renewable energy by seamlessly integrating an air source heat pump (ASHP) with an existing combi boiler.The Inta Hydra prioritises the ASHP as the primary heat source, switching to the combi boiler only when necessary, ensuring year-round efficiency. This hybrid system maximises renewable energy use, reduces reliance on fossil fuels, and maintains optimal comfort without requiring extensive modifications. Its efficient control logic and four pre-programmed Coefficient of Performance (COP) profiles enable tailored efficiency based on specific heating needs and conditions.Hydra is especially suitable for older properties or homes that may not benefit fully from ASHPs throughout the year.

Neil Stead, National Specification Manager at Inta, commented: "The Inta Hydra is a game-changer in hybrid heating. By combining ASHP technology with existing gas combi boilers, the Hydra makes renewable energy practical and cost-effective for homeowners. It also helps support the UK's decarbonisation goals by accelerating the rollout of ASHP technology."

The Inta Hydra supports the specification of lower output ASHPs, further reducing costs. It eliminates the need for a hot water storage cylinder, as the combi boiler provides all hot water requirements, contributing to significant cost savings.

The Inta Hydra comes with a two-year manufacturer's warranty for peace of mind and is the latest heat pump innovation from Inta, which has made a significant impact on the market with its range of ASHP peripheral products.

Find out more about Inta Hydra and Inta's range of heat pump products here:

www.intatec.co.uk/hydra

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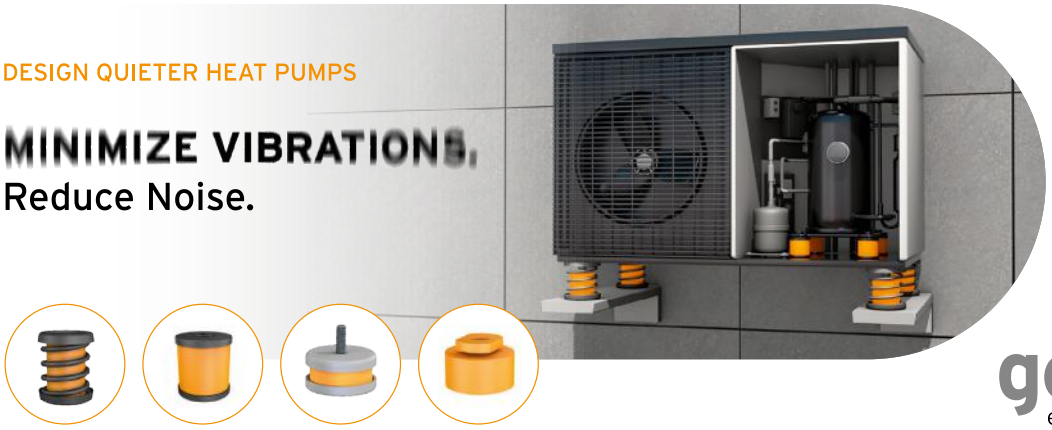

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Heat Pumps Today are proud to be a founding partner of HEAT PUMP WEEK 23-29 September

Heat pumps are essential for reducing home heating emissions, which account for around 18% of all greenhouse gas emissions in the UK. However, despite their numerous benefits for people and the planet, many have yet to fully understand or adopt these efficient heating technologies.

Heat Pump Week is an opportunity to unite the sector and engage the Government in highlighting the importance of heat pumps in the energy transition. The overarching objective is to raise awareness, improve understanding, and encourage consumers and businesses to embrace these sustainable solutions - ensuring a greener future for all.

Heat Pump Week is brought to you by Green.TV Media, founders of the Heat Pump Summit and also World EV Day™, which achieved over 200 million Twitter/X impressions in 2023 and ranked in the top 4 sustainability campaigns worldwide on LinkedIn.

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